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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,006	05/22/2002	Timothy William Grinsted		4595

7590

05/29/2003

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EXAMINER

LEE, JONG SUK

ART UNIT

PAPER NUMBER

3673

DATE MAILED: 05/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/089,006

Applicant(s)

GRINSTED, TIMOTHY WILLIAM

Examiner

Jong-Suk (James) Lee

Art Unit

3673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 May 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

1. The preliminary amendment filed on May 22, 2002 has been entered.

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Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "releasable mechanical locking means" in claim 2, line 2 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Claim Objections

3. Claims 1-5, 9 and 15-17 are objected to because of the following informalities:

Claim 1, line 5: "toe rope" should be --tow rope--.

Claim 2, line 2: "the said" should be --said--.

Claim 3, line 4: "the other" should be --the other ends--.

Claim 4, line 2: "the said" should be --said--.

Claim 5, line 1: "toe rope" should be --tow rope--.

Claim 9, lines 2-3: "the said" should be --said--.

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1 Claim 9, line 5: "the bridle limits" should be --the bridle limbs--.

2 Claim 15, line 2: "one such skid" should be --one of said skids--.

3 Claim 15, line 3: "another such skid" should be --another of said skids--.

4 Claim 16, lines 7-8: "one bridle limb attachment point" should be --one of said bridle limb
5 attachment points--.

6 Claim 17, line 7: "one bridle limb" should be --one of said bridle limbs--.

7 Appropriate correction is required.

8
9 ***Claim Rejections - 35 USC § 102***

10 4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the
11 basis for the rejections under this section made in this Office action:

12 A person shall be entitled to a patent unless --

13 (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or
14 on sale in this country, more than one year prior to the date of application for patent in the United States.

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16 5. Claims 1, 3-11, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by
17 Grinsted (US 4,759,138).

18 Grinsted discloses a plow steering system comprising of: a plough/plow share (12), a soil-
19 engaging fin/landslide (14), a tow rope attachment mechanism having a tow rope retention point
20 of a connection plate (50), the tow rope attachment mechanism being adapted to enable
21 adjustment of the position of the tow rope retention point relative to the plough by movement of

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1 the bridle retention points, thereby altering the position at which the line of a tow rope (20)
2 retained by the tow rope retention point crossing the longitudinal axis of the plough, so that the
3 plough can operate at a range of offset tow positions, wherein the tow rope attachment
4 mechanism comprising of a bridle having two bridle limbs (52, 54, 72, 76, 80) terminating at one
5 end of at the tow rope retention point and the other ends at the respective bridle limb retention
6 points (78) with the guides/holes at (70, 71) therethrough and a pair of arms (80) extending
7 laterally with respect to the plough (see Fig. 6) and/or longitudinally with respect to the plough
8 for lifting position (see Fig. 10), each arms pivotable relative to the plough about a vertical axis at
9 its inboard end (82) and providing a respective bridle rope attachment point at its outboard end
10 (see Figs. 5-6), the tow rope attachment mechanism being adapted to be adjusted by the relative
11 length of the bridle limbs for position adjustment of the tow retention point, the plough further
12 comprising a mechanical linkage/rams (88) between the bridle limbs so that lengthening of one of
13 the bridle limbs being accompanied by shortening of the other, two skids (16) being carried by a
14 steering member pivotable relative to the plough about a vertical axis, means for adjusting
15 ploughing depth by altering vertical distance between the skids and steering member as depicted
16 in Figs. 9-10 (see Figs. 3-10; col.2, lines 53-68; col.3, lines 1-68; col.4, lines 1-57; col.6, lines 15-
17 53).

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1 6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the
2 basis for the rejections under this section made in this Office action:

3 A person shall be entitled to a patent unless --

4 (e) the invention was described in-

5 (1) an application for patent, published under section 122(b), by another filed in the United States before
6 the invention by the applicant for patent, except that an international application filed under the treaty
7 defined in section 351(a) shall have the effect under this subsection of a national application published
8 under section 122(b) only if the international application designating the United States was published
9 under Article 21(2)(a) of such treaty in the English language; or

10 (2) a patent granted on an application for patent by another filed in the United States before the invention
11 by the applicant for patent, except that a patent shall not be deemed filed in the United States for the
12 purposes of this subsection based on the filing of an international application filed under the treaty
13 defined in section 351(a).
14

15 7. Claims 1, 11 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Rowley
16 (US 6,016,932).

17 Rowley discloses a steerable underwater plow with steering system comprising of: a
18 plough/plow share (32), a soil-engaging fin/landslide, a tow rope attachment mechanism having a
19 tow rope retention point of a connection plate, the tow rope attachment mechanism being adapted
20 to enable adjustment of the position of the tow rope retention point relative to the plough by
21 movement of the bridle retention points, thereby altering the position at which the line of a tow
22 rope (30) retained by the tow rope retention point crossing the longitudinal axis of the plough, so
23 that the plough can operate at a range of offset tow positions (see Figs. 4-5), wherein the tow
24 rope attachment mechanism comprising of a bridle having two bridle limbs terminating at one end
25 of at the tow rope retention point and the other ends at the respective bridle limb retention points

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1 with the guides/holes at a towing member (26) therethrough, a mechanical linkage/rams (36)
2 between the bridle limbs so that movement of one of the bridle limb attachment points in one
3 sense being accompanied by movement of the other in the other sense (see Figs. 1-7; col.3, lines
4 11-67; col.4, lines 1-56).

5
6 *Claim Rejections - 35 USC § 103*

7 8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness
8 rejections set forth in this Office action:

9 (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
10 section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
11 such that the subject matter as a whole would have been obvious at the time the invention was made to a person
12 having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the
13 manner in which the invention was made.

14 9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grinstead'138 in
15 view of Grinstead et al.'793 (US 4,802,793). The teachings of Grinstead'138 have been discussed
16 above.

17 However, Grinstead'138 fails to disclose or fairly suggest a releasable mechanical locking
18 means. Grinstead et al.'793 discloses a pipeline or cable plough including a locking mechanism for
19 locking the ram at fixed length to prevent the adjustment from taking place (see Fig.2; col.2, lines
20 53-58).

21 Therefore, in view of Grinstead et al.'793, it would have been obvious to one of the
22 ordinary skill in the art at the time the invention was made to modify the ram of Grinstead'138 with

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1 the lockable ram in order to efficiently control the proceeding direction of the plough by locking
2 and unlocking the ram.

3
4 10. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over
5 Grinstead'138 in view of Reece'793 (US 4,329,793). The teachings of Grinstead'138 have been
6 discussed above.

7 However, Grinstead'138 fails to disclose or fairly suggest fins engaged with one or more
8 supporting skids. Reece'793 discloses a trenching plow including a pair of supporting skids (31)
9 carrying the steerable soil engaging fins/blades (34) as depicted in Fig. 3 (see col.3, lines 54-68;
10 col.4, lines 1-8).

11 Therefore, in view of Reece'793, it would have been obvious to one of the ordinary skill
12 in the art at the time the invention was made to add the fins to the supporting skids in order to
13 enhance the stability of the plough while being in use.

14 With respect to the independent movement for the vertical distance between the skids, it
15 would have been obvious to one of the ordinary skill in the art at the time the invention was made
16 to vertically adjust the supporting skids with arms respectively in order to firmly locate the plough
17 to the sloping or uneven ground surfaces.

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Priority

11. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy of the priority documents have been received in this national stage application from the international Bureau (PCT Rule 17.2 (a)).

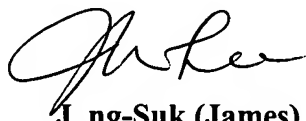
Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Other references cited disclose a steerable underwater plow, a pipeline plow with lifting assembly and a sea sled tow line vector system.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jong-Suk (James) Lee whose telephone number is (703) 308-6777. The examiner can normally be reached between the hours of 6:30 AM to 3:00 PM Monday thru Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather C. Shackelford, can be reached on (703) 308-2978. The fax phone number for this Group is (703) 305-3597.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-2168.

J. Lee /jjl
May 22, 2003



Jong-Suk (James) Lee
Primary Examiner
Art Unit 3673